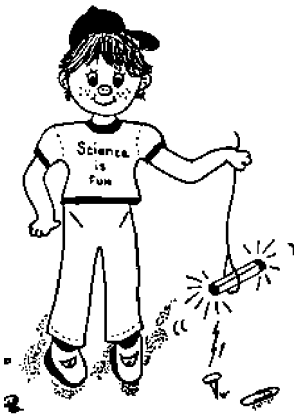
Hands-on Elementary Science Kits And Lesson Plans



Available at the
Federal Energy Technology Center
Pittsburgh

FEDERAL ENERGY TECHNOLOGY CENTER
FETC

First Grade Calendar

Seeds

			Number of extension activities
Lesson 1	Fall Harvest	2 days	at least 2
Lesson 2	Patterns to Eat	5 days	
Lesson 3	Seeds, Seeds, Seeds	5 days	at least 2
Lesson 4	Useful Seeds	5 days	at least 3
Lesson 5	Sprouting Seeds (Could be saved for spring)	10 days	at least 4

Patterns

Lesson 1	Making Tracks	5 days	at least 2
Lesson 2	Shadow Sights	5 days	at least 2
Lesson 3	What's Next?	5 days	at least 2
Lesson 4	Symmetry	5-6 days	at least 3

Magnetism

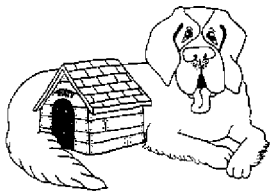
Lesson 1	Magnet Magic	5 days	at least 2
Lesson 2	Mighty Magnets	5 days	at least 2
Lesson 3	Passing Through	5 days	at least 2

Note to Teachers: This time frame is based on 30 to 45 minute class periods for just the basic lesson. It is expected that a number of extension activities will be included with each unit. When these are incorporated, the time frame will change.

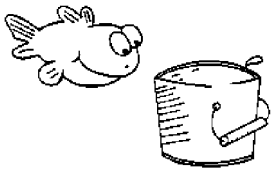
Second Grade Time Frame

Unit: Insects	**12 days**
Lesson 1	2 days
Lesson 2	1 day
Lesson 3	3 days
Lesson 4	2 days
Lesson 5	3 days
Lesson 6	2 days
Lesson 7A	2 days
Lesson 7B	2 days
Lesson 8	3 days

Unit: Measuring	**24 days**
Lesson 1	2 days
Lesson 2	2 days
Lesson 3	2 days
Lesson 4	2 days
Lesson 5 & 6	3 days
Lesson 7 & 8	2 days
Lesson 9 & 10	2 days
Lesson 11	2 days
Lesson 12	2 days
Lesson 13	2 days
Lesson 14 & 15	3 days



Unit: Sink or Float?	**15 days**
Lesson 1	2 days
Lesson 2	2 days
Lesson 3	2 days
Lesson 4	2 days
Lesson 5	2 days
Lesson 6	3 days
Lesson 7	2 days



Note to Teachers: **This time frame is based on 30 to 45 minute class periods for just the basic lesson. It is expected that a number of extension activities will be included with each unit. When these are incorporated, the time frame will change.**

Third Grade Time Frame

Introductory lesson	**1 day**	**30 min.**

Measurement — 14 Days

1)	Graph Pre Lesson	1 day	45 min.
2)	Predict Pre Lesson	2 days	30 min.
3)	Bounce the Ball	1 day	30 min.
4)	Bounce the Ball 11	2 days	45 min.
5)	Balance	2 days	30 min.
6)	Less Mass	2 days	45-60 min.
7)	More Mass	2 days	45-60 min.
8)	Trundle Wheel	2 days	30-60 min.

Flight — 19 Days

1)	Up and Away	2 days	45 min.
2)	Down and Around	2 days	45 min.
3)	Easy Does It	3 days	45-60 min
4)	Bulls Eye	2 days	45 min.
5)	Slow, Slower, Slowest	2 days	45 min.
6)	Crash Landing	3 days	30-40 min.
7)	Airplanes	1 day	45 min.
7A)	Airplanes	1 day	30 min.
7B)	Airplanes	1 day	30 min.
8)	Airplanes ll	2 days	45 min.

Plants — 24 Days

1)	From Which it Grows	2 days	45 min.
2)	Fair Test	2 days	45 min.+ 3 weeks follow up
3)	Fair Test Follow Up	1 day	45 min.
4)	Bar Graphing of Plant Growth (during 2nd week of growth	3 days	Pt. 1- 15 min. Pt. 2- 30-45 mi Pt. 3- 45 min.

5)	Bean Seeds	2 days	Pt. 1- 30 min. Pt. 2- 45 min. (1or 2 day later)
6)	What's in It?	2 days	45-60 min.
7)	Flower Power	2 days	45-60 min.
8)	What is a Seed	2 days	45 min. and several days
8A)	What is a seed Follow-Up	1 day	45 min.
9A)	Where Does Mold Grow	2 days	45 min. (1 week to observe)
10)	How Does a Solution reach the leaves of a plant?	1 day	30 min.
10A)	How Does a Solution reach the leaves of a plant? Follow-up	2 days	60 min.

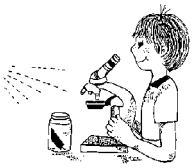
It is expected that a number of extension activities will be included with each unit. When you include the extension activities, your time frame will change.

While the above time estimates serve as a baseline for planting, the philosophy of the program encourages teachers and students to continue with activities and their extension activities each year, they may find it increasingly difficult to "cover" the complete *manual*.

Fourth Grade Calendar

Unit: Biocommunities **12 days**

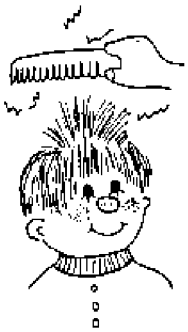
Lesson 1	Microscope	2 days
Lesson 2	A Pond Community**	3 days
Lesson 3	What Shall We Eat Today ?	2 days
Lesson 4	Brine Shrimp	1 day*
Lesson 5	Ant Farm	1 day*
Lesson 6	Ant Farm	2 days
Lesson 7	Setting Up an Aquarium	1 day*



* on going

** (Bucket of Mud, Microscope, Microscopic Organisms)

Unit: Electricity **15 days**



Lesson 1	Static Electricity	1 day
Lesson 2	Create A Circuit	2 days
Lesson 3	Electricity and Heat	1 day
Lesson 4	Examining a Light Bulb	1 day
Lesson 5	Conductor or Insulator	1 day
Lesson 6	Parallel and Series Circuits	2 days
Lesson 7	Making an Electric Tester	3 days
Lesson 8	Constructing an Electromagnet	1 day
Lesson 9	Constructing a cell	1 day
Lesson 10	Constructing an Electric Motor	2 days
Lesson 11	Electricity and Sound (OPTIONAL OR DEMONSTRATION)	1 day

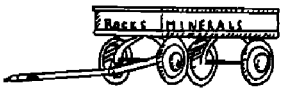
Unit: Chemistry **21 days**

Lesson 1	“Mystery Goop”	1 day
Lesson 2	Separating Mixtures	3 days
Lesson 3	Special Mixtures	2 days
Lesson 4	Acids and Bases	2 days
Lesson 5	Neutralizers	2 days
Lesson 6	Mystery Powders -Senses	2 days
Lesson 7	Soluble or Insoluble	2 days
Lesson 8	Iodine Test	2 days
Lesson 9	Vinegar Test	2 days
Lesson 10	Investigating Solids, Liquids, & Gases	3 days

Note to Teachers: This time frame is based on 30 to 45 minute class periods for just the basic lesson. It is expected that a number of extensions activities will be included with each unit. When these are incorporated, the time frame will change.

Fifth Grade Calender

Note: Lessons are assumed to be forty-five minutes a day

Unit: Mineral Identification  **15 days**

Lesson 1	Mineral Mysteries	(ongoing)	15 days

Unit: Earth Science **20 days**

Lesson 1	Dissolvable Rock	5 days
Lesson 2	Running Water	5 days
Lesson 3	Water Changing Rock	4 days
Lesson 4	Sedimentation	2 days
Lesson 5	Fossils	3 days
Lesson 6	Description and Comparison	4 days
Lesson 7	Force of Plants	3 days
	Review and Evaluation	2 days

Unit: Soil Analysis **14 days**

Lesson 1	Characteristics of Topsoil	5 days
Lesson 2	Soil Acidity	5 days
Lesson 3	Effects of Water on Soil	3 days
	Evaluation	1 day

Unit: Small Friends Community Wet and Dry **8 days**

Lesson 1	Crayfish	3 days
Lesson 2	Fruit Flies	5 days

While the above time estimates serve as a baseline for planning, the philosophy of the program encourages teachers and students to continue activities and their extensions for as long as there is sufficient interest. As teachers develop successful extension activities each year, they may find it increasingly difficult to "cover" the complete *manual*.